

<u>Dithane M-45</u> <u>formulation</u>	<u>Treatment</u> <u>formulation</u>	<u>Rate</u> <u>lb.a.i.</u>	<u>Yield lb/A</u>	<u>% leaf</u> <u>area w/rust</u>
WP	7	0.6	1270	17.75
WP	14	0.6	1118	20.25
DG	7	0.6	1144	14.25
DG	14	0.6	1037	24.5
WP	7	1.06	1268	11.75
WP	14	1.06	1310	19.75
DG	7	1.06	1304	9.75
DG	14	1.06	1031	14.5
WP	7	1.2	1390	7.0
WP	14	1.2	1208	12.25
DG	7	1.2	1146	9.25
DG	14	1.2	1190	11.75
WP	7	1.6	1546	4.25
Check	(untreated)	-	902	43.75
LSD			335	7.5

RACES OF THE BEAN RUST FUNGUS, UROMYCES APPENDICULATUS VAR.
APPENDICULATUS, FROM JAMAICA

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Using seven U.S. differential bean cultivars, (Harter and Zannmeyer, J. Agric Res. 62:717-731) 21 races of bean rust were identified among collections from four sites, made during 1979 and 1980. The methods used in this study have been described elsewhere (Shaik, M., B.I.C., This issue). Reactions of the U.S. differentials were graded on the 1-5 grading system outlined by Davison and Vaughan (Phytopathology 53:456-459) (Table 1). The 21 races which differ from the ones previously identified in the U.S. using the same differentials (Harter and Zannmeyer, J. Agric. Res. 62:717-731; Fisher, H.H., Plant Dis. Rep. 36:103-105) were designated J1 through J21 (Table 1).

In general, races prevalent at Alexandria in the Parish of St. Ann were virulent (produced pustules) on more cultivars than those present at Top Mountain, St. Andrew. The same trend was observed in the field experiments conducted at these sites in 1979. Of the 76 cultivars grown in the field trials, 53 and 74 developed pustules at Top Mountain and Alexandria respectively. These two sites differ considerably in the types and extent of cultivars grown. Alexandria is the major bean growing area in Jamaica. Red bean cultivars such as Jamaica Red (also known as Cockstone), Portland Red, Round Red and Miss Kelly are grown extensively throughout the year. Bean rust races present at this site were virulent on all the locally grown cultivars. In contrast, Top Mountain is not a major bean growing area. However, a few string- and red-bean cultivars are grown. Rust races at this site were virulent only on the string bean cultivars grown locally, Round Red and Jamaica Red but not on Portland Red or Miss Kelly. Further studies should be conducted with the new differential cultivars recently proposed (B.I.C. 26:iv-vi).

TABLE 1. Reactions of the U.S. differential bean cultivars to Jamaican races of bean rust.

U.S. Differential Cultivars								
Site	Race	Golden	KY	KY	KY	Pinto	Calif.	Bountiful
		Gate	Wonder	Wonder	Wonder		Small	
		Wax	814	780	765	111	White	181
T(z)	J 1	4(y)	1	2	1	2-3	1	4
T	J 2	5	1	2	1	1	1	5
T	J 3	4	1	2	1	2	1	4
A	J 4	4	1	2	2	3	2	5
A	J 5	4	3	4	2-3	4	2-3	3
M	J 6	4	4	4	2-3	4	3	4
B	J 7	3	1	-	2	1	2	4
B	J 8	4	1	2	2	2	2	4
T	J 9	5	1	3	2	4	2	5
M	J10	5	4	-	3	4	3	4
A	J11	4	5	4	3	4	1	4
A	J12	4	3	4	2-3	4	2	4
A	J13	4	3	4	2-3	4	2	3
A	J14	1	3	-	2-3	4	2-3	4
A	J15	1	3	5	2-3	4	2-3	4
A	J16	4	3	5	2-3	4	2-3	3
T	J17	5	4	-	2-3	5	2	5
T	J18	4	1	-	1	3	2	5
T	J19	3	1	-	1	3	2	5
T	J20	4	4	-	2-3	4	2	4
M	J21	4	1	2	1	1	1	5

(y) Grades of rust reactions: 1=No symptoms, apparently immune; 2=Necrotic spots; 3=Pustules of diameter <300 μ m; 4=Pustules of diameter 301-499 μ m; 5=Pustules of diameter >500 μ m. 2-3 indicates necrosis around and/or together with pustules of grade 3. Immune and necrotic spot reactions represent observations of five replicate plants in each race/cultivar combination. Pustule grades are based on mean diameter of 36 pustules in each race/cultivar combination.

(z) Sites of collection: A=Alexandria (St. Ann); B=Belvedere (Westmoreland); M=Mona (St. Andrew); T=Top Mountain (St. Andrew).